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10/009,105	05/06/2002	Rombout Adriaan Swanborn	702-012058	5516

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EXAMINER

HOPKINS, ROBERT A

ART UNIT PAPER NUMBER

1724

DATE MAILED: 05/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	10/001,165	Applicant(s)	Robert A. Hopkins
Examiner	Art Unit	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 5 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 26-41 is/are pending in the application.
 - 4a) Of the above claim(s) 26-41 is/are withdrawn from consideration.
- 5) Claim(s) 1-16 is/are allowed.
- 6) Claim(s) 1-25, 31-35, 39-44, 47, 48 is/are rejected.
- 7) Claim(s) 27, 34, 35, 41 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____

- 4) Interview Summary (PTO-413) Paper No(s) _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because ***. Correction is required. See MPEP § 608.01(b).

The abstract recites “and to a separating vessel designed in accordance with the method of claim 24”. Examiner respectfully requests applicant delete the above recited line of the abstract so that claim numbers are not recited in the abstract. Also claim 24 is not a part of the current claims.

Claim Rejections - 35 USC § 112

Claim 47 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 47 recites “a step of applying a device for separating a mixture of gas with liquid and/or solids”. Examiner respectfully submits that “a step of applying a device” is not a proper method step. Examiner is unsure as to what structure the device is being applied on. Examiner suggests rewording the method claim to more clearly define a method step, such as --A method for treating a mixture of gas with liquid and/or solids, comprising sending the mixture into a processing vessel for separating the gas from the liquid and/or solids, the processing vessel comprising ... --. Correction is requested.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C.

102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 26,28-31,33,34-36,39-44 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Fernandes(3590558).

Fernandes teaches a device for separating a mixture of gas with solids comprising a processing vessel comprising an inlet(14) for the mixture to be separated, a first(28) and second(89) outlet opening for a discharge of respectively a first mixture part and a second mixture part into a space of a further vessel, a flow body arranged substantially concentrically in the processing vessel and provided with one or more swirl elements(44) for setting the supplied mixture into swirling movement, a discharge channel(28) for discharging the first mixture part to the first outlet opening, which discharge channel is arranged substantially through an interior of the flow body and extends from a downstream side of the flow body to the first outlet opening, a first resistance element(54) with a predetermined flow resistance arranged between the second outlet opening and the flow body, and a second resistance element(36) with a predetermined flow resistance, arranged in the discharge channel, downstream of which the first outlet opening is arranged. Fernandes further teaches wherein the second resistance element includes one or more counter swirl elements(36) for reducing the swirling movement of the second

mixture part flowing there among. Fernandes further teaches wherein the second resistance element includes a central core, on a top side of which is mounted a conical component which becomes wider in a flow direction. Fernandes further teaches wherein flat plates are provided for limiting a rotation of the mixture part flowing there among. Fernandes further teaches wherein the inlet opening of the processing vessel is provided with means for feeding in the mixture for separating at an increased tangential speed. Fernandes further teaches wherein a swirl element includes one or more swirling blades, wherein the swirling blades are formed for setting into swirling movement or at least increasing the swirling movement of the mixture flowing there among.

Fernandes further teaches wherein a counter-swirl element includes one or more swirling blades(36), wherein the swirling blades are formed for decreasing the swirling movement of the mixture flowing there among. Fernandes further teaches wherein an angle between a longitudinal direction of the processing vessel and a swirling blade amount to between approximately 0 and 80 degrees. Fernandes further teaches wherein the swirling blades are curved.

Claim 47 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Fernandes(3590558).

Fernandes teaches a method for treating a mixture of gas with solids comprising the step of applying a device for separating a mixture of gas with solids, comprising a processing vessel comprising an inlet(14) for the mixture to be separated, a first(28) and second(89) outlet opening for a discharge of respectively a first mixture part and a second mixture part into a space of a

further vessel, a flow body arranged substantially concentrically in the processing vessel and provided with one or more swirl elements(44) for setting the supplied mixture into swirling movement, a discharge channel(28) for discharging the first mixture part to the first outlet opening, which discharge channel is arranged substantially through an interior of the flow body and extends from a downstream side of the flow body to the first outlet opening, a first resistance element(54) with a predetermined flow resistance arranged between the second outlet opening and the flow body, and a second resistance element(36) with a predetermined flow resistance, arranged in the discharge channel, downstream of which the first outlet opening is arranged.

Claim 48 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Fernandes(3590558).

Fernandes teaches a method for designing a device for separating a mixture into a light and heavy fraction, comprising the step of designing components of a processing vessel such that the components can be fed through a manhole into a gravity separation vessel, wherein the processing vessel comprises an inlet for the mixture, a first outlet for the light fraction and a second outlet for the heavy fraction , in addition to rotation means for setting the mixture into rotation, wherein swirl elements arranged close to the inlet are provided with swirling blades dimensioned such that through the desired degree of rotation a reselected pressure is available whereby the boundary surface between the heavy and light fraction extends on a reselected level within the processing vessel.

Claims 26,28,30,31,33,34-36,39-44 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Armstrong et al(2936043).

Armstrong et al teaches a device for separating a mixture of gas with solids comprising a processing vessel comprising an inlet for the mixture to be separated, a first and second outlet opening for a discharge of respectively a first mixture part and a second mixture part into a space of a further vessel, a flow body arranged substantially concentrically in the processing vessel and provided with one or more swirl elements(16) for setting the supplied mixture into swirling movement, a discharge channel(13) for discharging the first mixture part to the first outlet opening, which discharge channel is arranged substantially through an interior of the flow body and extends from a downstream side of the flow body to the first outlet opening, a second resistance element(17) with a predetermined flow resistance, arranged in the discharge channel, downstream of which the first outlet opening is arranged. Armstrong et al further teaches wherein the second resistance element includes one or more counter swirl elements(17) for reducing the swirling movement of the second mixture part flowing there among. Armstrong et al further teaches wherein flat plates are provided for limiting a rotation of the mixture part flowing there among. Armstrong et al further teaches wherein the inlet opening of the processing vessel is provided with means for feeding in the mixture for separating at an increased tangential speed. Armstrong et al further teaches wherein a swirl element includes one or more swirling blades, wherein the swirling blades are formed for setting into swirling movement or at least increasing the swirling

movement of the mixture flowing there among. Armstrong et al further teaches wherein a counter-swirl element includes one or more swirling blades(17), wherein the swirling blades are formed for decreasing the swirling movement of the mixture flowing there among. Armstrong et al further teaches wherein an angle between a longitudinal direction of the processing vessel and a swirling blade amount to between approximately 0 and 80 degrees. Armstrong et al further teaches wherein the swirling blades are curved.

Claim 47 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Armstrong et al(2936043)

Armstrong et al teaches a method for treating a mixture of gas with solids comprising the step of applying a device for separating a mixture of gas with solids, comprising a processing vessel comprising an inlet for the mixture to be separated, a first and second outlet opening for a discharge of respectively a first mixture part and a second mixture part into a space of a further vessel, a flow body arranged substantially concentrically in the processing vessel and provided with one or more swirl elements(16) for setting the supplied mixture into swirling movement, a discharge channel(13) for discharging the first mixture part to the first outlet opening, which discharge channel is arranged substantially through an interior of the flow body and extends from a downstream side of the flow body to the first outlet opening, a second resistance element(17) with a predetermined flow resistance, arranged in the discharge channel, downstream of which the first outlet opening is arranged.

Claim 48 is rejected under 35 U.S.C. 102(b) as being clearly anticipated

by Armstrong et al(2936043)

Armstrong et al teaches a method for designing a device for separating a mixture into a light and heavy fraction, comprising the step of designing components of a processing vessel such that the components can be fed through a manhole into a gravity separation vessel, wherein the processing vessel comprises an inlet for the mixture, a first outlet for the light fraction and a second outlet for the heavy fraction , in addition to rotation means for setting the mixture into rotation, wherein swirl elements arranged close to the inlet are provided with swirling blades dimensioned such that through the desired degree of rotation a reselected pressure is available whereby the boundary surface between the heavy and light fraction extends on a reselected level within the processing vessel.

Allowable Subject Matter

Claims 27,32,37,38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 27 recites “wherein the first resistance element includes one or more counter-swirl elements for reducing the swirling movement of the first mixture part flowing there among”. Fernandes teaches a first resistance element including openings (68), but does not disclose wherein the first resistance element includes one or more counter-swirl elements for reducing the swirling movement of the first mixture part flowing there among. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to

provide a first resistance element which includes one or more counter-swirl elements for reducing the swirling movement of the first mixture part flowing there among because Fernandes does not suggest such a modification.

Claim 32 recites "including a perforated plate placed close to the second outlet opening and downstream thereof for ensuring a substantially uniform velocity profile on a downstream side thereof". Fernandes does not disclose a perforated plate placed close to the second outlet opening and downstream thereof for ensuring a substantially uniform velocity profile on a downstream side thereof. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a perforated plate because Fernandes does not suggest such a modification.

Claim 37 recites "wherein the processing vessel includes an inner jacket which includes a conically tapering part in a flow direction". Fernandes and Armstrong et al does not disclose an inner jacket which includes a conically tapering part in a flow direction. . It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide an inner jacket which includes a conically tapering part in a flow direction because neither Fernandes nor Armstrong et al suggest such a modification. Claim 38 depends on claim 37 and hence would also be allowable upon incorporation of claim 37 into claim 26.

Claim 49 recites "further including a gravity separation vessel which is provided with an inlet for the mixture". Neither Fernandes nor Armstrong et al disclose a gravity separation vessel which is provided with an inlet for the

mixture. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a gravity separation vessel because neither Fernandes nor Armstrong et al suggest such a modification.

Claims 45 and 46 are allowed.

Claim 45 recites "a gravity separation vessel which is provided with an inlet for a supply of the mixture, . . . , the processing vessel can be mounted in the separation vessel with the inlet connected to the inlet of the gravity separation vessel". Neither Fernandes nor Armstrong et al disclose a gravity separation vessel in connection with the processing vessel. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a gravity separation vessel in connection with the processing vessel because neither Fernandes nor Armstrong et al suggest such a modification.

Claim 46 depends on claim 45 and hence is also allowed.

Application number: 10/009,105
Art Unit: 1724

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A Hopkins whose telephone number is 703-308-3913. The examiner can normally be reached on Monday-Friday 9:00am-3:00pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 703-308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9572 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Robert A. Hopkins
Robert A Hopkins

Primary Examiner

rah
April 4, 2003